

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-21 (canceled)

Claim 22 (original): A method for generating a sensor signal model for a received signal within an adaptive broadcast radar system, comprising:

defining a clutter component for said received signal at a receiver, wherein said clutter component comprises a direct path signal and a scattered signal;

defining a channel transfer function;

generating a sampled version of said received signal according to said channel transfer function at a sample time;

determining a batch of data from said sampled version for a sub-aperture of said receiver at said sample time; and

indexing said batch of data into said sensor signal model.

Claim 23 (original): The method of claim 22, wherein said sensor signal model is a linear system model.

Claim 24 (original): The method of claim 22, wherein said batch of data includes a delay.

Claim 25 (original): The method of claim 22, further comprising linearizing a phase delay within said channel transfer function to determine a doppler shift component for said received signal.

Claim 26 (original): The method of claim 25, further comprising absorbing said phase delay into said channel transfer function.

Claim 27 (original): The method of claim 25, wherein said phase delay correlates to a direction of clutter relative to said receiver.

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Claims 28-45 (canceled)

Claim 46 (currently amended): An adaptive broadcast radar system, comprising:

a transmitter comprising a first plurality of sub-apertures, wherein each sub-aperture comprises a bank of phase shifters and sub-aperture weights to generate a fixed beam and codes a signal waveform with data about the transmitter, said data including degrees of freedom; and

a receiver comprising a second plurality of sub-apertures coupled to a signal processor, wherein each sub-aperture comprises a bank of phase shifters and sub-aperture weights to modify the signal waveform received from the transmitter and wherein said signal processor generates a transmit beam signal according to said data within each signal waveform.